

Model GEO-AQUp^{ro}

Advanced Water Quality Multiprobe



- **Applications:** Multiprobe for spot sampling, profiling & unattended monitoring
- **Rugged and Reliable:** Highly reliable water-quality data. Versatile. Ideal for coastal, surface, ground and waste water monitoring
- **Datalogger compatible:** Sonde connects directly to METEODATA / HYDRODATA dataloggers for remote stations
- **Smart sensor technology:** Lower maintenance costs and greater reliability
- **Innovation in unattended deployment:** Get measurements from Remote stations by means of GEONICA Suite and WEBTRANS software packages
- **RS232 / RS485 / SDI-12 communications:** For connection to datalogger
- **Customer service:** Industry-best
- **2-year warranty**

DESCRIPTION & FEATURES

The continuous measurement and monitoring of quality for both surface and underground water represents an unavoidable requirement for knowing its condition and helping to take the necessary measures to preserve both the environment and a resource as valuable and increasingly scarce as water.

For this purpose, **GEONICA** provides **Model GEO-AQUp^{ro} Water Quality Multiprobe** for the continuous measurement of physicochemical parameters of water: Temperature, Conductivity, TDS, Salinity, Dissolved Oxygen, pH, ORP and Turbidity as well as other parameters such as the concentration of Ammonia/Ammonium, Nitrate, Chloride, Sodium, Calcium, Bromide, TDG (Total Dissolved Gas), Chlorophyll, Blue Green Algae, Rhodamine, and others.

METEODATA / HYDRODATA
Datalogger / Transmitter Unit
(GPRS/3G, Radio or Satellite)



MULTIPROBE SPECIFICATIONS

Number of Sensors	up to 13
Operating Temperature	-5 to 50 °C
Storage Temperature	-40 to +60 °C for sonde and all sensors
Material	Clear PVC and stainless steel
Depth Rating	200 m
Communications	RS-232, RS-485, SDI-12, USB or Bluetooth
Sample Rate	1 Hz
Data Memory	4 MB; >1,000,000 logged readings
Power	External 12 VDC or optional Battery Pack
Battery Pack	8 "AA" cells or 8 "C" cells or 6 "C" cells Autonomy: 30 days at 30 minute interval

CE Conformity

- EMC European Directive: 89/336/EC
- EMC Standard: EN 61326
- Conformity Assessment Procedure:
EMI/EMC Test plan (28 Feb 2007)



SENSOR SPECIFICATIONS

Parameter	Range	Resolution	Accuracy	Comments
Temperature	-5 to 50 °C	0.01	±0.1	never needs calibration
Optical Dissolved Oxygen	0 to 20 mg/l	0.01	±0.1 mg/l	compensated for temperature and salinity; EPA approved "lifetime" luminescence method (HDO), replace sensor cap after 4 years depending on usage
	20 to 30 mg/l		±0.15 mg/l	
	30 to 50 mg/l	0.1	±5%	
	0 to 500 % saturation	0.1%	corresponds with the accuracy of the concentration reading	
Specific Conductance	0 to 5 mS/cm	4 digits	±0.3% of reading ±0.001	corrected for temperature; four easy-to-clean graphite electrodes; optional sensor provides ±0.5% of reading accuracy to 100 mS/cm. (PSS practical Salinity Scale) open-ended cell type sensor measurement is not affect by debris
	0 to 25 mS/cm	4 digits	±0.5% of reading ±0.001	
	0 to 100 mS/cm	4 digits	±0.5% of reading ±0.001	
	100 to 275 mS/cm	4 digits	±1% of reading	
Salinity	0 to 70 ppt (PSS)	0.01	±0.1 ppt	
Total Dissolved Solids (TDS)	0 to 65 g/l	0.1	±5% of reading	
pH	0 to 14 units	0.01	±0.1 within 10C of Cal; ±0.2 otherwise ±0.02 whole range with special calibration	corrected for temperature, refillable reference electrode
ORP	-999 to 999 mV	1	±20 mV in redox std solutions	ORP sensor is combined with pH sensor
Vented Level	0 to 10 m	0.001	±0.003m	auto compensated for barometric pressure
Depth, Non Vented	0 to 10 m	0.01	±0.01	compensated for temperature and salinity
	0 to 25 m	0.01	±0.025	
	0 to 50 m	0.01	±0.05	
	0 to 100 m	0.01	±0.05	
Barometric Pressure	400 to 900 mm Hg	0.1	±1.5	available only with depth sensor
Turbidity	0 to 600 FNU	4 digits	±1% of reading ±1 count	compensated for temperature; includes wiper to clean the optics
	600 to 3,000 FNU	4 digits	±2% of reading	
Chlorophyll a	0 - 500 µg/l	6 digits	linearity of 0.99R ²	highest-quality fluorometric sensors from Turner Designs
Rhodamine dye	0 - 1,000 ppb	6 digits	linearity of 0.99R ²	
BGA-Phycocyanin (freshwater cyanobacteria)	0 - 40,000 ppb	6 digits	linearity of 0.99R ²	
BGA-Phycoerythrin (marine cyanobacteria)	0 - 750 ppb	6 digits	linearity of 0.99R ²	
CDOM / FDOM	0 - 1,250 ppb or 0 - 5,000 ppb	6 digits	linearity of 0.99R ²	
Optical Brighteners	0 - 15,000 ppb	6 digits	linearity of 0.99R ²	
Tryptophan	0- 20,000 ppb	6 digits	linearity of 0.99R ²	
Fluorescein dye	0 - 500 ppb	6 digits	linearity of 0.99R ²	
Refined oil	0 - 10,000 ppb	6 digits	linearity of 0.99R ²	
Crude oil	0 - 1,500 ppb	6 digits	linearity of 0.99R ²	
Ammonium	0 - 100 mg/l as nitrogen	0.1	±5% or 2 mg/l	ISE's; ammonium and nitrate have replaceable tips; ISE's require non-trivial maintenance and calibration, max depth 15 meters for ionic strength via conductivity readings
Nitrate	0 - 100 mg/l as nitrogen			
Chloride	0 - 18,000 mg/l			
Sodium	0 to 20,000 mg/l			
Calcium	0 - 40,000 mg/l			
Bromide	0 - 80,000 mg/l			
Total Dissolved Gas (TDG)	400 - 1,400 mm Hg	4 digits	±1	compensated for temperature, max depth 15m
User Configurable Parameter	create up to 5 custom parameters. Examples: calculate TSS from turbidity, based on a preferred conversion factor; flow from depth based on known relationship between depth and flow.			

Note: Specifications indicate typical performance in laboratory conditions and are subject to change.